

Instructional Timeline – Kindergarten Mathematics – 1 <sup>st</sup> Nine Weeks	
Unit 1B: Geometry	
Suggested Time Frame: ≈ 3 weeks	
<b>Introduction</b>	The Instructional Timeline, as required by RRISD Local Board Policy (EG – Local, 246909), breaks down the content of each nine-week period into smaller, more manageable units of instruction.
<b>Description</b>	Students will describe positions of objects. They will use attributes to determine likeness and differences. They will recognize attributes of 2 or 3 dimensional geometric figures. Students will display math concepts using concrete models in problem solving connected to everyday experiences.
<b>TEKS/SEs taught during this period and eligible for testing on district assessments</b>  <b>Underlined TEKS/SEs are high stakes for our district (less than 80% mastery on TAKS)</b>  <b>Bold TEKS/SEs are assessed on TAKS</b>	<p>K.2 Number, operation, and quantitative reasoning. The student describes order of events or objects. The student is expected to:</p> <p>K.2A Use language such as before or after to describe relative position in a sequence of events or objects</p> <p>K.7 Geometry and spatial reasoning. The student describes the relative positions of objects.</p> <p>K.7A Describe one object in relation to another using informal language such as over, under, above, and below.</p> <p>K.7B Place an object in a specified position.</p> <p>K.8 Geometry and spatial reasoning. The student uses attributes to determine how objects are alike and different.</p> <p>K.8A Describe and identify an object by its attributes using informal language.</p> <p>K.8B Compare two objects based on their attributes.</p> <p>K.8C Sort a variety of objects including two- and three-dimensional geometric figures according to their attributes and describe how the objects are sorted.</p> <p>K.9 Geometry and spatial reasoning. The student recognizes attributes of two- and three-dimensional geometric figures.</p> <p>K.9A Describe and compare the attributes of real-life objects such as balls, boxes, cans and cones or models of three-dimensional geometric figures.</p> <p>K.9B: Recognize shapes in real-life three-dimensional geometric figures or models of three-dimensional geometric figures.</p> <p>K.9C Describe, identify, and compare circles, triangles, rectangles and squares (a special type of rectangle).</p> <p><b>Ongoing – Using Math in the Real World</b></p> <p>K.6 Patterns, relationships, and algebraic thinking. The student uses patterns to make predictions.</p> <p>K.6B Count by ones to 100.</p> <p>K.11 Measurement. The student uses time to describe, compare, and order events and situations.</p> <p>K.11C Read a calendar using days, weeks, and months.</p> <p>K.12 Probability and statistics. The student constructs and uses graphs of real objects or pictures to answer questions.</p> <p>K.12A Construct graphs using real objects or pictures in order to answer questions</p> <p>K.12B Use information from a graph of real objects or pictures in order to answer questions</p> <p>K.13 Underlying processes and mathematical tools. The student applies Kindergarten</p>

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	<p>mathematics to solve problems connected to everyday experiences and activities in and outside of school.</p> <p>K.13A Identify mathematics in everyday situations.</p> <p>K.13B Solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness.</p> <p>K. 13C Select or develop an appropriate problem-solving strategy including drawing a picture, looking for a pattern, systematic guessing and checking or acting it out in order to solve a problem.</p> <p>K.13D Use tools such as real objects, manipulatives, and technology to solve problems.</p> <p>K.14 Underlying processes and mathematical tools. The student communicates about Kindergarten mathematics using informal language.</p> <p>K.14A Communicate mathematical ideas using objects, words, pictures, numbers and technology.</p> <p>K.14B Relate everyday language to mathematical language and symbols.</p> <p>K.15 Underlying processes and mathematical tools. The student uses logical reasoning.</p> <p>K.15A Justify his or her thinking using objects, words, pictures, numbers, and technology.</p>
<b>Generalizations</b>	<p><b>The student understands that:</b></p> <ol style="list-style-type: none"> <li>1. Shapes can be described in terms of their position and their attributes.</li> <li>2. Connected lines create figures.</li> <li>3. Some shapes can relate to other shapes.</li> <li>4. Sorting is a way to group objects.</li> <li>5. Objects can be sorted by similarities and differences.</li> <li>6. Objects can be classified into categories.</li> </ol>
<b>Essential Questions</b>	<ul style="list-style-type: none"> <li>• How can you describe shapes?</li> <li>• What happens when you connect lines?</li> <li>• Where can you find shapes?</li> <li>• How might shapes be alike?</li> <li>• What attributes does a given group of shapes have in common?</li> <li>• How might shapes be different?</li> <li>• How can you group objects?</li> </ul>
<b>Core Components</b>	<p><b>Including Statements:</b></p> <ul style="list-style-type: none"> <li>• Describe relationship of the position of one object to another</li> <li>• Use position words such as inside/outside, beside, between, in front of/in back of, behind, left/right</li> <li>• Describe objects using informal language referring to shape, size, color, texture, or use. Use geometric shapes found in the classroom such as balls, pencils, trash can</li> <li>• Describe how objects are alike or different using appropriate vocabulary based on size, shape, color, texture, or function</li> <li>• Sort a group of objects or 2-dimensional figures several times based on a given attribute</li> <li>• <u>Attributes include:</u> size, shape, color, texture, the number of sides, and function</li> <li>• <u>Objects include:</u> attribute blocks, pattern blocks, buttons, and other familiar objects that represent 3-dimensional figures</li> <li>• Explain how two or more objects are alike or different</li> <li>• Use words such as shape and size</li> </ul>

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Curricular Connections (within, between, and among disciplines)	<p><b>Related Science TEKS</b></p> <p><b>K.5A</b> observe and record properties of objects, including relative size and mass, such as bigger or smaller and heavier or lighter, shape, color, and texture</p> <p><b>K.7A</b> observe, describe, compare, and sort rocks by size, shape, color, and texture</p> <p><b>K.10A</b> sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape</p> <p><b>Related Social Studies TEKS</b></p> <p><b>K.4B</b> locate places on the school campus and describe their relative locations.</p> <p><b>K.12A</b> Identify family customs and traditions and explain their importance;</p> <p><b>K.12B</b> Describe customs of the local community.</p> <p><b>K.11A</b> Identify personal attributes common to all people such as physical characteristics.</p> <p><b>K.11B</b> Identify differences among people.</p>
Required Lessons	
Recommended Lessons and Learning Experiences	<p><b>NCTM Navigations-<i>Navigating Through Geometry Grades K-2</i></b> (Look in Campus Library or order through <a href="#">i-Bistro District Library Catalog</a>)</p> <ul style="list-style-type: none"> <li>• “Ins and Outs” pg. 33</li> <li>• “Match My Grid” pg. 36</li> <li>• “Shapes from Shapes” pg. 14</li> </ul> <p><b>NCTM Navigations-<i>Navigating Through Data Analysis and Probability Grades K-2</i></b> (Look in Campus Library or order through <a href="#">i-Bistro District Library Catalog</a>)</p> <ul style="list-style-type: none"> <li>• “Junk Sort” pg. 22-24</li> </ul> <p><b>NCTM Navigations-<i>Navigating Through Problem Solving and Reasoning Grade K</i></b> (Look in Campus Library or order through <a href="#">i-Bistro District Library Catalog</a>)</p> <ul style="list-style-type: none"> <li>• “Shape Families” pg. 17-19</li> </ul> <p><b>Mathematics TEKS Refinement</b>  <a href="#">Baggie Shapes</a>  <a href="#">Hop Along Frog</a></p> <p><b>Mathematics TEKS Toolkit Clarifying Lesson</b>  <a href="#">Geometry in Our World</a></p> <p><b>Mathematics TEKS Toolkit Clarifying Activities</b>  <a href="#">Geometry and Spatial Reasoning</a></p> <p><b>Exemplars</b>  <a href="#">Pretty Shapes Volume 9, Spring 2002</a>  <a href="#">Popsicle Stick Shapes Volume 8, Spring 2001</a></p> <p><b>Investigations</b>  <b>Topic 1</b>  <b>Unit 1:</b> Who Is in School Today? Classroom Routines and Materials  ACTIVITY: Exploring Pattern Blocks, p. 28</p>

## Instructional Timeline – Kindergarten Mathematics – 1<sup>st</sup> Nine Weeks

### Unit 1B: Geometry

ACTIVITY: Exploring Geoblocks  
 ACTIVITY: Exploring Connecting Cubes, p. 30  
 MATH WORKSHOP: Exploring More Materials, p. 50  
 ACTIVITY: Introducing *Button Match-Up* (game), pp. 71 and 73  
 ACTIVITY: Introducing *Attribute Block Match-Up* (game), p. 77, 79, and 86  
 ACTIVITY: Sorting People, p. 107

#### Unit 3: What Comes Next? Patterns and Functions

ACTIVITY: Introducing *What's Missing?* (game), pp. 30 and 31  
 ACTIVITY: Reintroducing Activities About Attributes, p. 31

#### Topic 2

#### Unit 1: Who Is in School Today? Classroom Routines and Materials

ACTIVITY: Exploring Pattern Blocks, p. 28  
 ACTIVITY: Exploring Geoblocks  
 ACTIVITY: Exploring Connecting Cubes, p. 30  
 ACTIVITY: Introducing the *Calendar* Routine, p. 37  
 MATH WORKSHOP: Exploring More Materials, p. 50

#### Unit 3: What Comes Next? Patterns and Functions

ACTIVITY: Introducing *What's Missing?* (game), pp. 30 and 31

#### Topic 12

#### Unit 5: Make a Shape, Build a Block 2-D and 3-D Geometry

ACTIVITY: Looking at 2-D Shapes, p. 23  
 ACTIVITY: Introducing Shape Pictures, p. 24  
 ACTIVITY: Making a Shape Picture, p. 26  
 MATH WORKSHOP: Exploring Materials and Making Shape Pictures, p. 29  
 ACTIVITY: Making Clay Shapes, p. 41  
 ACTIVITY: Introducing the Shape Mural, p. 59  
 ACTIVITY: Looking at 3-D Shapes, p. 93  
 MATH WORKSHOP: Exploring 3-D Shapes, p. 99  
 DISCUSSION: A Close Look at Geoblocks, p. 100  
 ACTIVITY: *Matching Faces* (game), p. 107

#### NCTM lessons - Illuminations

[Amazing Attributes - Lesson](#)

#### Engaged Learning Options:

- School or nature walk: students explore where shapes can be found in “real world”.
- I Spy games
- Musical chairs – shape is taped to chair and child names the shape before getting out

#### enVision MATH

#### Topic 1 - Sorting and Classifying

- Lesson 2 – p. 5A
- Lesson 3 – p. 7A
- Lesson 4 – p. 9A

#### Topic 2 – Position and Location

- Lesson 1 – p. 19A
- Lesson 2 - p. 21A
- Lesson 3 – p. 23A

## Instructional Timeline – Kindergarten Mathematics – 1<sup>st</sup> Nine Weeks

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- Lesson 4 – p. 25A
- Lesson 5 – p. 27A

**\*Be aware that the differentiated instruction for each of these lessons has additional hands-on activities/games.**

#### **Topic 12 – Geometry**

- Lesson 1 – p. 217A
- Lesson 2 – p. 219A
- Lesson 3 – p. 221A
- Lesson 4 – 223A
- Lesson 5 – 225A
- Lesson 6 – p. 227A

#### **Differentiation**

**[English Language Proficiency Standards Student Expectations with Sentence Stems and Activities to support implementation of the Standards](#)** (Note: when you open the link, it may ask you for a certificate or if it is OK to open the file, click OK each time you see the screens.)

Use Math TEKS Connections strategies from “[MTC Rapid Assessments Interpretations](#)” pages 976, 978, 980, and 982 to differentiate for more and less depth and complexity

#### **Less Depth and Complexity:**

- MTC strategies from “[Rapid Assessments](#)” page 981
- **Relative Position:** students can practice commands in a “Simon Says” game if having difficulty using informal language; if the student cannot place objects correctly, then place the objects in various positions and have the student name the position
- **Attributes:** student names the figure but says little else – challenge the student to create a group of five objects that have something in common; students guess what their peer’s collection has in common – accept informal language such as ‘really pointy’ as a first step in analyzing attributes
- **Describe, identify, compare figures:** challenge student’s rigid concept of why a “triangle is a triangle” by having her tell you a rule about triangles and then draw a figure that fits the incomplete rule but is not a triangle (triangles are pointy – draw another pointy figure)
- extra time to complete tasks
- small group time provided (pre-teach)
- small group or partner with peer model
- signal (Example: thumbs up/down) to share ideas or answers and to check for understanding
- select answer from given choices
- use pictures and hands on materials to explain vocabulary

#### **More Depth and Complexity:**

- MTC strategies from “[Rapid Assessments](#)” page 981
- **Relative Position** challenge student to respond to two positions simultaneously (behind the chart and under the table); if student correctly places an object then challenge to place object along two dimensions simultaneously (put the book behind the table and between the chairs)
- **Attributes:** students are asked to share sorting rules with the whole class to challenge students into more mathematical language such as there are three points instead of ‘pointy things’
- **Describe, identify, compare figures:** if student only identifies figures in prototypical

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	<p>positions; then rotate drawing of 2D figure and ask “What changes happened? Is it still a ‘square’?”</p> <ul style="list-style-type: none"> <li>▪ create own problems beyond grade level expectations</li> <li>▪ students use multiple strategies and explanations</li> <li>▪ small group (extension)</li> </ul>
<b>Instructional Resources</b>	<p><b><i>Teaching Student-Centered Mathematics K-3</i></b> by Van de Walle          (Look in Campus Library or order through <a href="#">i-Bistro District Library Catalog</a>)          Read Chapter 1 regarding using problem-based tasks and how to use questioning to provide hints without solutions          Chapter 7 – Geometric Thinking and Concepts</p> <p><b>Literature Connections</b>          (Look in Campus Library or order through <a href="#">i-Bistro District Library Catalog</a>)  <i>Math Start</i> by Stuart Murphy  <i>3 Little Firefighters</i> by Stuart Murphy (sorting)  <i>Rosie’s Walk</i> by Pat Hutchins (Position Words)  <i>Wheel Away</i> by Dayle Ann Dodds (Position Words)</p> <p><a href="#">Funbrain - various games and activities</a></p> <p><a href="#">Round Rock ISD Elementary Mathematics Webpage</a></p>
<b>Assessment Resources</b>	<p><a href="#">Rapid Assessments</a></p> <ul style="list-style-type: none"> <li>• K.7A (describing location of objects)</li> <li>• K.7B (location of objects)</li> <li>• K.8B (comparing shapes)</li> <li>• K.9C (describing 2D shapes)</li> <li>• Continue assessing K.6B (counting to 100); K.11C (read calendar)</li> </ul> <p>Acces4 Database – Consult campus Instructional Technology Specialist for assistance with accessing Acces4 database.</p>